

WHAT IS CLAIMED IS:

1. A method of setting a sound field generated when audio signals of plural channels which are outputted from an audio signal reproducing apparatus are reproduced from loudspeakers of the respective channels, the method comprising the steps of:

cutting off the feed of the audio signals from the audio signal reproducing apparatus to the loudspeakers of the respective channels;

10 capturing a test sound generated by a listener at a listening point by the loudspeakers of the respective channels as sound pickup data;

detecting and comparing volume levels at predetermined points of the sound pickup data captured by the loudspeakers of the respective channels, and thereby generating volume adjusting data of the audio signals of the respective channels; and

15 controlling volumes of the audio signals of the respective channels in response to the volume adjusting data respectively.

2. A method of setting a sound field which is recited in claim 1, further comprising the steps of:

20 detecting and comparing timings of the data values at the predetermined points of the sound pickup data captured by the loudspeakers of the respective channels, and thereby generating delay time setting data of the audio signals of the respective channels; and

25 controlling delay times of the audio signals of the respective channels in response to the delay time setting data respectively.

3. A method of setting a sound field which is recited in claim 1, wherein the predetermined points are points of timings at which exceeding a

prescribed threshold occurs.

4. A method of setting a sound field which is recited in claim 2, wherein

the predetermined points are points of timings at which exceeding a

5 prescribed threshold occurs.

5. A computer program for setting a sound field generated when audio

signals of plural channels which are outputted from an audio signal

reproducing apparatus are reproduced from loudspeakers of the respective

10 channels, the computer program comprising the steps of:

cutting off the feed of the audio signals from the audio signal
reproducing apparatus to the loudspeakers of the respective channels;

capturing a test sound generated by a listener at a listening point by
the loudspeakers of the respective channels as sound pickup data;

15 detecting and comparing volume levels at predetermined points of
the sound pickup data captured by the loudspeakers of the respective
channels, and thereby generating volume adjusting data of the audio
signals of the respective channels; and

controlling volumes of the audio signals of the respective channels in
20 response to the volume adjusting data respectively.

6. A computer program for setting a sound field which is recited in

claim 5, further comprising the steps of:

detecting and comparing timings of the data values at the
25 predetermined points of the sound pickup data captured by the
loudspeakers of the respective channels, and thereby generating delay time
setting data of the audio signals of the respective channels; and

controlling delay times of the audio signals of the respective

channels in response to the delay time setting data respectively.

7. A computer program for setting a sound field which is recited in
claim 5, wherein the predetermined points are points of timings at which
5 exceeding a prescribed threshold occurs.

8. A computer program for setting a sound field which is recited in
claim 6, wherein the predetermined points are points of timings at which
exceeding a prescribed threshold occurs.

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9. An audio reproducing apparatus provided with a system for setting a
sound field generated when audio signals of plural channels which are
outputted from the audio reproducing apparatus are reproduced from
loudspeakers of the respective channels, the audio reproducing apparatus
15 comprising:

means for cutting off the feed of the audio signals from the audio
signal reproducing apparatus to the loudspeakers of the respective
channels;

20 means for capturing a test sound generated by a listener at a
listening point by the loudspeakers of the respective channels as sound
pickup data;

a detector for detecting volume levels at predetermined points of the
sound pickup data captured by the loudspeakers of the respective
channels;

25 a generator for comparing the detected volume levels, and thereby
generating volume adjusting data of the audio signals of the respective
channels; and

a controller for controlling volumes of the audio signals of the

respective channels in response to the volume adjusting data respectively.

10. An audio reproducing apparatus as recited in claim 9, further comprising:

5 a detector for detecting timings of the data values at the predetermined points of the sound pickup data captured by the loudspeakers of the respective channels;

10 a generator for comparing the detected timings of the data values, and thereby generating delay time setting data of the audio signals of the respective channels; and

15 a controller for controlling delay times of the audio signals of the respective channels in response to the delay time setting data respectively.

11. An audio reproducing apparatus as recited in claim 9, wherein the 15 predetermined points are points of timings at which exceeding a prescribed threshold occurs.

12. An audio reproducing apparatus as recited in claim 10, wherein the predetermined points are points of timings at which exceeding a prescribed 20 threshold occurs.

13. A sound-field setting system comprising:

loudspeakers of plural channels;

means for cutting off the feed of the audio signals from the audio

25 signal reproducing apparatus to the loudspeakers of the respective channels;

means for capturing a test sound generated by a listener at a listening point by the loudspeakers of the respective channels as sound

pickup data;

a detector for detecting volume levels at predetermined points of the sound pickup data captured by the loudspeakers of the respective channels;

5 a generator for comparing the detected volume levels, and thereby generating volume adjusting data of the audio signals of the respective channels; and

a controller for controlling volumes of the audio signals of the respective channels in response to the volume adjusting data respectively.

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14. A sound-field setting system as recited in claim 13, further comprising:

a detector for detecting timings of the data values at the predetermined points of the sound pickup data captured by the 15 loudspeakers of the respective channels;

a generator for comparing the detected timings of the data values, and thereby generating delay time setting data of the audio signals of the respective channels; and

20 a controller for controlling delay times of the audio signals of the respective channels in response to the delay time setting data respectively.

15. A sound-field setting system as recited in claim 13, wherein the predetermined points are points of timings at which exceeding a prescribed threshold occurs.

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16. A sound-field setting system as recited in claim 14, wherein the predetermined points are points of timings at which exceeding a prescribed threshold occurs.

17. A sound-field setting system comprising:
 - loudspeakers of plural channels;
 - first means for using the loudspeakers as microphones to convert a test sound generated at a desired listening point into corresponding electric signals respectively;
 - second means for detecting amplitudes of the electric signals generated by the loudspeakers;
 - third means for setting desired gains for input audio signals of the plural channels in response to the amplitudes detected by the second means;
 - fourth means for amplifying the input audio signals at the desired gains set by the third means to generate amplified audio signals respectively; and
 - fifth means for feeding the amplified audio signals generated by the fourth means to the loudspeakers respectively.
18. A sound-field setting system comprising:
 - loudspeakers of plural channels;
 - first means for using the loudspeakers as microphones to convert a test sound generated at a desired listening point into corresponding electric signals respectively;
 - second means for detecting moments of arrival of the test sound at the loudspeakers in response to the electric signals generated by the loudspeakers respectively;
 - third means for delaying input audio signals by delay times depending on the moments detected by the second means to generate delayed audio signals respectively; and

fourth means for feeding the delayed audio signals to the loudspeakers respectively.

19. A sound-field setting system comprising:
5 loudspeakers of plural channels;

 first means for using the loudspeakers as microphones to convert a test sound generated at a desired listening point into corresponding electric signals respectively;

10 second means for detecting moments of arrival of the test sound at the loudspeakers in response to the electric signals generated by the loudspeakers respectively;

 third means for setting desired delay times for input audio signals of the plural channels in response to the moments detected by the second means;

15 fourth means for delaying the input audio signals by the desired delay times set by the third means to generate delayed audio signals respectively; and

 fifth means for feeding the delayed audio signals to the loudspeakers respectively.

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20. A sound-field setting system as recited in claim 19, further comprising:

 sixth means for detecting amplitudes of the electric signals generated by the loudspeakers;

25 seventh means for setting desired gains for the input audio signals in response to the amplitudes detected by the sixth means;

 eighth means for amplifying the input audio signals at the desired gains set by the seventh means to generate amplified audio signals

respectively; and

ninth means for feeding the amplified audio signals generated by the eighth means to the loudspeakers respectively.